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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/986,210	10/22/2001	Min-Goo Kim	678-762 (P9997)	4975
28249	7590	09/20/2005	EXAMINER	
DILWORTH & BARRESE, LLP 333 EARLE OVINGTON BLVD. UNIONDALE, NY 11553			VLAHOS, SOPHIA	
			ART UNIT	PAPER NUMBER
			2637	

DATE MAILED: 09/20/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/986,210

Examiner

SOPHIA VLAHOS

Applicant(s)

KIM ET AL.

Art Unit

2637

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 October 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 October 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Priority

1. Acknowledgment is made of applicant's claim for foreign priority based on an application filed in Korea on 10/21/2000. It is noted, however, that applicant has not filed a certified copy of the KR 2000-62153 application as required by 35 U.S.C. 119(b).

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-4, 11-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Banister (U.S. 6,876,641) in view of Berger et. al., (U.S. 2003/0221156) and further view of Javerbring (U.S. 6,604,216).

With respect to claim 11, Banister discloses: a sub-code generator (Fig. 1 elements 10,12,14,16,"A") for generating a plurality of sub-codes with the same or different code rates (Fig. 1, elements 18, 20) for the input of a PLP (Physical Layer Packet) (column 1, lines 14-19, 43-52) information bit stream; a controller (Fig. 1, element 18) for determining a minimum data rate by which the number of symbols of a sub-code is equal to or greater than the number of transmittable symbols for each time period (column 4, lines 14-17); and a symbol pruner (Fig. 1, element 20) for pruning the symbols of the sub-code so that the number of the

symbols of the sub-code is equal to the number of transmittable symbols for the time period, if the number of the symbols of the sub-code is greater than the number of transmittable symbols for the time period (column 4, lines 17-24, 44-50)

Banister fails to teach modulation symbols generated by a predetermined modulation method is equal to or greater than the number of transmittable modulation symbols for each time period; a symbol pruner for pruning part of the modulation symbols of the sub-code.

In the same field of endeavor, Javerbring et. al., disclose a modulating circuit (Fig. 1, element 128)

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to modify Banister by incorporating the modulating circuit disclosed by Javerbring et. al., as it is typical in traditional wireless communications systems.

In the same field of endeavor, Berger et. al., disclose a symbol pruner (Fig. 1, elements 28 and 32) for deleting part of the symbols (codewords) (paragraph [0030]).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to modify Banister by using the symbol pruner described by Berger et. al., because it provides flexible error control and is adaptable to system conditions [Berger et. al., paragraphs [0013], [0018]].

4. With respect to claim 12, all the limitations of claim 12, are analyzed above in claim 11, and Berger et. al., disclose pruning part o of the second half of the modulation symbols of the sub-code (Table 1, paragraph [0035]).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to modify Banister by using the symbol pruner described by Berger et. al., because it provides flexible error control and is adaptable to system conditions [Berger et. al., paragraphs [0013], [0018]].

4. With respect to claim 13, all the limitations of claim 13, are analyzed above in claim 11, and Javerbring et. al. disclose the sum of the numbers preamble symbols (Fig. 1, element H1) and the modulation symbols (Fig. 1, "Data Block") of the first sub-code are equal to the number of transmittable modulation symbols in a first time period.

At the time of the invention it would have been obvious to a person of ordinary skill in the art to modify Banister by using the symbol format of Javerbring because in communications the preamble (header) contains important information.

5. Claims 5-7, 14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Banister (U.S. 6,876,641) in view of Berger et. al., (U.S. 2003/0221156) and further view of Javerbring (U.S. 6,604,216).

With respect to claim 14, Banister discloses a sub-code generator (Fig. 1 elements 10,12,14,16,"A") for generating a plurality of sub-codes with the same or different code rates (Fig. 1, elements 18, 20) for the input of a PLP (Physical

Layer Packet) information bit stream and sequentially transmitting the sub-codes for time periods (column 1, lines 14-19, 43-52); a controller (Fig. 1, element 18) for determining a minimum data rate by which the number of symbols of a sub-code is equal to or greater than the number of transmittable symbols for each time period (column 4, lines 14-17);); a symbol pruner (Fig. 1, element 20) for pruning the symbols of the sub-code so that the number of the symbols of the sub-code is equal to the number of transmittable symbols for the time period, if the number of the symbols of the sub-code is greater than the number of transmittable symbols for the time period (column 4, lines 17-24, 44-50) a channel interleaver for channel-interleaving the symbols (Fig. 1, element 22) of the sub-code generated at the minimum code rate.

Banister fails to teach a modulator for modulating the channel interleaved symbols generated by a predetermined modulation method; a symbol pruner for pruning part of the modulation symbols of the sub-code so that the number of the modulation symbols of the sub-code is equal to the number of transmittable modulation symbols for the time period.

In the same field of endeavor, Javerbring et. al., disclose a modulating circuit (Fig. 1, element 128)

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to modify Banister by incorporating the modulating circuit disclosed

by Javerbring et. al., as it is typical in traditional wireless communications systems.

In the same field of endeavor, Berger et. al., disclose a symbol pruner (Fig. 1, elements 28 and 32) for deleting part of the symbols (codewords) (paragraph [0030]).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to modify Banister by using the symbol pruner described by Berger et. al., because it provides flexible error control and is adaptable to system conditions [Berger et. al., paragraphs [0013], [0018]].

With respect to claim 15, all the limitations of claim 15, are analyzed above in claim 14, and Berger et. al., disclose pruning part of the second half of the modulation symbols of the sub-code (Table 1, paragraph [0035]).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to modify Banister by using the symbol pruner described by Berger et. al., because it provides flexible error control and is adaptable to system conditions [Berger et. al., paragraphs [0013], [0018]].

With respect to claim 16, all the limitations of claim 16, are analyzed above in claim 14, and Javerbring et. al. disclose the sum of the numbers of preamble symbols (Fig. 1, element H1) and the modulation symbols (Fig. 1, "Data Block") are equal to the number of the transmittable modulation symbols in a first time period.

At the time of the invention it would have been obvious to a person of ordinary skill in the art to modify Banister by using the symbol format of Javerbring because in communications the preamble (header) contains important information.

6. Claims 8-10, 17-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Banister (U.S. 6,876,641) in view of Berger et. al., (U.S. 2003/0221156) and further view of Javerbring (U.S. 6,604,216).

With respect to claim 17, Banister discloses a sub-code generator (Fig. 1 elements 10,12,14,16,"A") for generating a plurality of sub-codes with the same or different code rates (Fig. 1, elements 18, 20) for the input of a PLP (Physical Layer Packet) information bit stream and sequentially transmitting the sub-codes for time periods (column 1, lines 14-19, 43-52); a controller (Fig. 1, element 18) for determining a minimum data rate by which the number of symbols of a sub-code is equal to or greater than the number of transmittable symbols for each time period (column 4, lines 14-17); a channel interleaver for channel-interleaving the symbols (Fig. 1, element 22) of the sub-code generated at the minimum code rate;) and a symbol pruner (Fig. 1, element 20).

Banister fails to teach a symbol pruner for pruning part of the channel-interleaved symbols so that the number of the channel-interleaved symbols is equal to the number of transmittable modulation symbols, if the number of the channel-interleaved symbols is greater than the number of transmittable modulation

symbols A modulator for modulating the remaining channel-interleaved symbols generated by the predetermined modulation method;

In the same field of endeavor, Berger et. al., disclose a symbol pruner (Fig. 1, elements 28 and 32) for deleting part of the symbols (codewords) (paragraph [0030]).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to modify Banister by using the symbol pruner described by Berger et. al., because it provides flexible error control and is adaptable to system conditions [Berger et. al., paragraphs [0013], [0018]].

In the same field of endeavor, Javerbring et. al., disclose a modulating circuit (Fig. 1, element 128)

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to modify Banister by incorporating the modulating circuit disclosed by Javerbring et. al., as it is typical in traditional wireless communications systems.

With respect to claim 18, all the limitations of claim 18, are analyzed above in claim 17, except for the symbol pruner prunes part of the second half of the channel-interleaved symbols

Berger et. al., disclose pruning part of the second half of symbols (Table 1, paragraph [0035]).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to modify Banister by using the symbol pruner described by Berger et. al. to prune the channel-interleaved symbols because it provides flexible error control and is adaptable to system conditions [Berger et. al., paragraphs [0013], [0018]].

With respect to claim 19, all the limitations of claim 19, are analyzed above in claim 17, except for the sum of the numbers of preamble symbols and the number of the channel-interleaved symbols of the first sub-code is equal to the number of the transmittable modulation symbols in a first time period

Javerbring et. al. disclose the sum of the numbers of preamble symbols (Fig. 1, element H1) and the modulation symbols (Fig. 1, "Data Block") are equal to the number of the transmittable modulation symbols in a first time period.

At the time of the invention it would have been obvious to a person of ordinary skill in the art to modify Banister by using the symbol format of Javerbring because in communications the preamble (header) contains important information.

With respect to claims 1,2,4,5,6,7,8,9,10 the steps claimed as method are restating the function of the specific components of the apparatus claimed above in claims 11,12,13,14,15,16,17,28,19 respectively and would have been obvious, considering the aforementioned rejection of apparatus claims 11,12,13,14,15,16,17,28,19 respectively.


With respect to method claim 3, all the limitations of claim 3, were analyzed above in apparatus claim 11, and Banister discloses the modulation symbols of the sub-code are channel interleaved symbols (Fig. 1, element 22).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to SOPHIA VLAHOS whose telephone number is 571 272 5507. The examiner can normally be reached on MTWRF 8:30-17:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, JAY PATEL can be reached on 571 272 2988. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

9/19/2005
SV



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SUPERVISORY PATENT EXAMINER